4. Note on the "Africa-Indien" of A. von Pelzeln, and on the Mammalian Fauna of Tibet. By W. T. Blanford, F.R.S., F.Z.S.

[Received June 6, 1876.]

I am indebted to the kindness of Herr August von Pelzeln for copies of two papers lately written by him on the mammalian fauna and avifauna of India and Malayasia. The first, entitled "Africa-Indien"*, was published last year; the second, on the Mammalian fauna of the Malay countries†, has just reached me. These papers are well worthy the attention of all interested in the question of the geographical distribution of animals. I have for some years past contended that the fauna of India proper, or Hindustan as it is often called on European maps (Hindustan in India itself has a much more restricted signification), is not an integral part of the so-called "Indian region" of Dr. Sclater and other naturalists. My views were adopted by the late Dr. Stoliczka, and were identical with those held by Mr. Blyth‡. It is very satisfactory to find similar views enforced independently by so high an authority as Herr von Pelzeln and in so careful an essay.

The whole world is divided by v. Pelzeln into six regions, viz:—

I. The Arctic (comprising the Palæarctic and Nearctic of Sclater).

II. The American Tropical (Neotropical of Sclater).

III. The Australian.

IV. The Ethiopian.

V. The Hindustan (India and Ceylon).

VI. The Malay, including the Himalaya, Tibet, Southern China with Formosa, "Hinter-Indien" (*i. e.* Burma, Siam, and the Malay peninsula), the Sunda archipelago up to Wallace's line—and probably Madagascar, the Mascarene, Comoro, and Seychelles Islands (Lemuria).

I am rather disposed, with Andrew Murray §, to unite the Ethio-

* "Africa-Indien, Darstellung der Beziehungen zwischen der africanischen und indo-malayischen Vogel-Fauna nebst allgemeineren Betrachtungen über die geographische Verbreitung der Säugethiere, von August von Pelzeln, Custos des k.-k. zoologischen Hof-Cabinets," Verhandl. k. k. zool.-bot. Ges. Wien, 1875, pp. 33–62.

† Ueber die malayische Säugethier-Fauna von August von Pelzeln. Separat-Abdruck aus dem Festschrift zur Feier des 25-jährigen Bestehens des k.-k. zool.-bot. Ges. in Wien.

‡ See his remarks on the division of the earth into zoological regions; Nature, 1871, vol. iii. p. 427.

§ 'Geographical Distribution of Mammals,' p. 304. I may remark that Mr. Murray's maps, so far as they exhibit the distribution of particular genera in India, are frequently incorrect. Thus Map xx. represents that there is no Wolf in India, whilst in Maps xxv., xxvii., xli., xlvi., and lxiii. the following mammals are represented as ranging more or less throughout the peninsula to Cape Comorin—*Mydaus*, *Helictis*, Binturong, Wild Ass, Rhinoceros, and European Mole! With the doubtful exception of the Rhinoceros, not one of these animals is found in the peninsula of India, the Wild Ass being confined to the deserts of Cutch and Bikanir. There are other mistakes in matters of detail.

pian and Malay regions with India and Lemuria into one great region; and I still hold that the hills of Southern India with the Malabar coast and Southern Ceylon form a province of the Malay region, whilst the greater portion of the Indian peninsula is African in its affinities *. This subject, however, is too large for discussion in the present note, the principal object of which is to point out a correction which is, I think, of some importance, with regard to the fauna of Tibet. This is, by v. Pelzeln, included in the Malay region: he comprises the typical Tibetan genera such as *Panthalops* and *Poëphagus* in his list of Malay forms; and on the map accompanying the paper on the Malay mammal-fauna the Kuenluen range is shown as the northern limit of the region.

The fauna of the Tibetan plateau has, in reality, no Malay affinities; but the cause of the misunderstanding is simple. The two naturalists to whose writings one naturally turns for information about Tibetan animals, are Mr. Hodgson and Père David; and both are eminently misleading, since both collected simultaneously specimens from two faunas which have in fact scarcely a generic type in common—the Himalayan, which is quite correctly classed by v. Pelzeln as a subdivision of the Malay region, and the Tibetan, which is part of Blyth's Mongolian province belonging to the Boreal or Palæarctic region. The former possessess a very rich fauna with numerous peculiar types; the latter is poor in species, though individuals are locally numerous. It is consequently not surprising that the few members of the Tibetan fauna which show peculiarity should be ignored amongst the vast bulk of Himalayan genera, and that Tibet should be assigned to the Malay region.

On the southern slopes of the Himalayas there is everywhere, until it has been cleared, luxuriant forest up to at least 12,000 feet above the sea, inhabited by a fauna which extends without any great change of generic forms, throughout the Malay peninsula and into the hill-tracts of some at least of the Malay islands †. Immediately ‡ north of the main Himalayan range, a cold, barren, and desert region of mountains and plateaux extends, swept by winds from which all moisture has been drained by the high mountain-chains on all sides. To this tract not one of the forest-haunting inhabitants of the Himalayas ever penetrates, although many of them extend far into the mountains along the damp and richly wooded valleys of rivers. The fauna of these Tibetan plateaux is essentially Boreal, Alpine and even Arctic types prevailing, the country having in many parts a climate scarcely equalled elsewhere for intensity of cold out of the Arctic regions. This high barren tableland extends from Afghanistan to Yunan; it comprises the drainage-areas of the Upper Indus and the Sanpú, and is bounded on the north in its western portion by the Kuenluen range; but it is less defined and its boundaries less accurately known to the eastward,

* J. A. S. B. 1870, vol. xxxix. pt. 2. p. 336.

† Elwes, P. Z. S. 1873, p. 615.

‡ How sudden the change is, in places, is admirably described in Hooker's 'Himalayan Journals,' vol. ii. p. 158.

although much light has been thrown upon the subject by Prejewalski's explorations.

Lately, when examining the collections brought by Dr. Stoliczka from Western Tibet and Eastern Turkestan, I endeavoured to make a list of the mammals known to inhabit the Tibetan plateau. The list is naturally very imperfect; but still, I think, it is of some value, because it serves completely to dissipate the idea of there being any thing in common between the fauna of Tibet and that of the Himalayan-forest region or the Malay region. It is quite true that a few forms such as *Lagomys* and *Arvicola* extend into the alpine portion of the Himalayan region; but this may be partly due to a law of diffusion which is always found to prevail on the edge of two different zoological provinces, if no impassable physical barrier intervenes. Moreover the Himalayan species are generally distinct from the Tibetan; and they may be members of a Boreal fauna to which *Cervus cashmeriensis* and *Ursus isabellinus* * belong, and which is well developed in Kashmir and may, I think, be traced throughout the Himalayas.

In the list which I append, W. is added to the names of all species only known from Western Tibet, E. to those hitherto brought from Eastern Tibet alone.

LIST OF MAMMALIA KNOWN TO INHABIT THE TIBETAN PLATEAU.

Chiroptera.

Plecotus auritus. W.

Insectivora.

Sorex (*Crocidura*) *myoides.* W.

Carnivora.

Felis uncia.
Felis manul. E.
Felis isabellina.
Canis laniger (=*C. chanco*).
Canis niger (perhaps a variety of the foregoing).
Canis (*Vulpes*) *montanus* (=*C. flavescens*).
Canis (*Vulpes*) *ferrilatus.* E.
Canis (*Cuon*) *alpinus* †?
Martes toufœus.
Mustela erminea.
Mustela temon.
Putorius larvatus. E.
Lutra, sp. W.

Rodentia.

Arctomys caudatus. W.
A. himalayanus (=*A. robustus*).
Sciurus europæus? E.
Mus crassipes? W.
Arvicola blythi (= *Phaiomys leucurus*, Blyth). W.
Arvicola stoliczkanus. W.
Lepus tibetanus. W.
Lepus oistolus (perhaps the same as the next).
Lepus pallipes.
Lepus hypsibius. W.

* Neither of these species is found, except as a straggler, on the north of the dividing range between Kashmir and Ladák.

† It is more probably this species (which Gray, Cat. Carn. &c. Mamm. B. M. 1869, p. 184 has shown to be a *Cuon*) than the Indian *C. rutilans* which inhabits Tibet.

Lagomys ladacensis (= *L. curzoniæ*, Stol. nec Hodgs.). W.
Lagomys auritus. W.
? *Lagomys curzoniæ* (? = *L. tibetanus*). E.

UNGULATA.

Equus hemionus.
Bos grunniens.
Ovis hodgsoni.
Ovis vignei. W.
Ovis nahura.
Capra sibirica.
Panthalops hodgsoni.
Gazella picticauda.

It is possible that *Budorcas taxicolor*, the Musk-deer, and *Cervus affinis* should be added; but I have grave doubts as to whether any of these are really found on the Tibetan plateau. *Budorcas* may, like *Nemorhædus* and *Hemitragus*, be Himalayan, whilst I suspect that the Musk-deer and *Cervus affinis* belong to the Boreal or Palæarctic types of the Himalayan alpine fauna already referred to. I feel also very doubtful whether *Lagomys curzoniæ* is the species found in the Tibetan valleys north of Sikkim. The Chumbi valley, whence *Lagomys curzoniæ* and *Cervus affinis* are said to have been procured, belongs politically to Tibet, but it is Cis-Himalayan.

I should point out that this slight correction in no way invalidates any of Herr v. Pelzeln's views. There are a few errors in matters of detail, such as the inclusion of *Gazella*, *Antilope*, and *Mellivora* in the list of Malay genera, on the ground, apparently, of their supposed occurrence in Nipal. This must, I think, be due to the British-Museum catalogues of Mr. Hodgson's collections, in which a considerable number of animals are included, obtained from other parts of India than Nipal, although there is no means afforded by the catalogue of distinguishing them from the species collected in the Himalayas.

In conclusion I can only call attention to the very interesting palæontological suggestions at the end of Herr v. Pelzeln's papers. He considers the Malay fauna to be allied to that which inhabited Europe in older Miocene times, while he associates the newer Miocene mammalian fauna of Europe and India with that inhabiting the Ethiopian region at the present day. I can only remark upon this that several of the early Miocene forms of Europe (e. g. *Erinaceus*, *Castor*, *Myoxus*, *Cricetodon*, *Hyomoschus*, *Antilope*) are not Malay forms at present, and that the last two are African, whilst part of the apparent similarity is perhaps due to the warm climate of the early Miocene epoch in Europe—and that the Indian Sevaliks are much more probably Pliocene than Miocene. It is, however, very unfair to dismiss a carefully reasoned argument with a criticism of this kind; and I only regret that, just at present, time will not allow me to do justice to Herr v. Pelzeln's views.